CIRC ACCESSION NO--AP0123882

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EVALUATION OF THE MOST RELIABLE ACCELERATED METHODS FOR DETERMINING THE ENDURANCE LIMIT OF ALUMINUM ALLOYS, D16T, AV, D1, AND AK4-1 UNDER DIFFERENT LOADING CONDITIONS. FATIGUE TESTS WERE CARRIED OUT USING SMOOTH SAMPLES AND SAMPLES WITH STRESS RAISERS. ERRORS COMMITTED IN DETERMINATION OF THE ENDURANCE LIMIT BY ACCELERATED METHODS WERE EVALUATED BY COMPARING THE RESULTS WITH THOSE OBTAINED BY CONVENTIONAL, LONG TERM METHODS. FACILITY: VSESOIUZNYI INSTITUT LEGKIKH SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 8.74

DERYAGIN, G. V.

"Statistical Method of Determining Asymmetry in the Insertion of a Label in a Pair of Morphologically Indistinguishable Objects"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works), vyp. 25, Moscow, "Nauka", 1972, pp 95-100 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V561)

Translation: A statistical method is proposed for determining the degree of asymmetry of a composite binomial distribution, including determination of the difference between homological chromosomes in accordance with the intensity of activation of a radioactive label in the chromosomes. It is shown that in determining such asymmetry the proposed method is somewhat poorer than Hart's method but better than Ubrach's method. Bibliography of 13 titles. Author's abstract.

1/1

USSR   UDC 528.517:621.373.9

DERYAGIN, V. N., MARASIN, L. YE., POPOV, YU. V., Candidate of Sciences

"Small GDFI-3 Pulse-Phase Laser Range Finder with Digital Output"

Abstract: The GDFI-3 pulse-phase laser range finder is described. It is a
further development of a previously described device [V. N. Deryagin, et al.,
Optiko-mekhanicheskaya promyshlennost', No 6, 27, 1970; No 12, 27, 1970]. The
circuitry has been simplified appreciably, and provision has been made for high
speed and data output on a digital display. The mathematical description of
the method on which the range finder is based, a block diagram of the device
and a description of an experimental model are given. Instead of the usually
measured interval $\Delta t = 2D/c$, the interval τ_T obtained as a result of linear
transformation is measured [$\tau_T = \Delta\phi T_{intermediate}/2\pi$ where $\Delta\phi$ is the phase shift
between the signal and reference voltages, and $T_{intermediate} = 1/F_{intermediate}$].
The test results show that the range to a corner reflector about 100 cm^2 in area
is no less than 12 km and to diffusely reflecting objects, ~250 meters. The
measurement accuracy is ± 5 cm.

1/1

USSR   UDC 620.193.01

PALEOLOG, Ye. N., FEDOTOVA, A. Z., and DERYAGINA, O. G., Academy
of Sciences USSR, Institute of Physical   Chemistry

"Kinetics of Reduction-Oxidizing Reactions on TiO_2 and NiO Single
Crystals and on the Oxidized Surface of Metals"

Abstract: The distribution of interfacial differences of poten-
tials on passive Ni and Ti surfaces was determined on the basis
of previously measured kinetic parameters of reduction-oxidizing
reactions on surfaces of Ni and Ti, of their compact oxides, and
of platinum. TiO_2 single crystals were produced by the Verneuil
method and treated in vacuum at 750°; NiO single crystals were
alloyed with lithium. The potentiostatic anodic oxidation of Ni
and Ti shows a principally different mechanism. The logarithmic
oxidation rule of Ti is for Ni realized at the potential $\varphi = 0.30$ v.
At more positive potentials (0.5 and 0.7 v), the growth of the
film follows the logarithmic rule only in the beginning; later on
it changes to the parabolic type. The differences in the oxidation
mechanism and kinetics of Ni and Ti meet the evaluation re-
sults of the potential distribution in the systems. Two figures,
six bibliographic references.

USSR   UDC   612.1+616.1(99)

DERYAPA, N. R., SHASTIN, I. V., and VENTSENOSTSEV, B. B.

"Physiology and Pathology of the Circulatory System in the Antarctic"

Translation of abstract: The article presents the results of systematic
studies on blood circulation in polar explorers during acclimation at the
coastal stations and on sled-tractor trips. The authors observed 303
persons in the course of four expeditions. They found that distinct and
varied changes take place in the functioning of the circulatory system in
the course of acclimation. Over the winter the men developed changes in
blood pressure and heart rate, sonorousness of the heart sounds, functional
murmurs, shifts in myocardial bioelectrical activity of varying pathological
significance, disturbances of myocardial contractility, and changes in the
main hemodynamic parameters.
        The absolute majority of explorers showed various physiological
acclimation changes in the circulatory system of an adaptive nature. How-
ever, pathological changes indicative of the onset of cardiovascular disease
were common. The relative significance of the pathological changes was by
no means the same in the different expeditions. In the Central Antarctic,
1/2

USSR

DERYAPA, N. R., et al., Antarktika, Doklady Komissii, No 11, 1972

the circulatory changes were more pronounced than on the coast. An important
means of preventing serious cardiological pathology is strict medical
screening of candidates for the expeditions. Further improvement in the
living and working conditions of the men is also important.

2/2

Lasers & Masers

DERYUGIN, I. A. and VORONTSOV, V. I.

"Vibration-Cyclotron Resonance"

Translation: In the nonrelativistic approximation a quantum theory
of cyclotron resonance is developed within the constants of a uniform
magnetic field and the electric field of an actual hyperboloid ca-
pacitor. It is found that for a definite relationship between the
electric and magnetic field intensities, when the equality

$$\Omega_{1a}^2 = (3/2)\Omega_0^2$$

is satisfied, cyclotron resonance for an axial rotor transforms to
vibration-cyclotron resonance for a spherical rotor for the Larmor
frequency and characteristic oscillation frequencies of the stro-
photronic effect. The equidistance spectrum of the energy eigen-
values between which dipole transitions with three frequencies are
1/2

USSR

possible is determined. When the conditions of spherical symmetry with non-zero orbital moment are satisfied. the vibration-cyclotron effect may be worthy of interest in the new area of laser engineering, quantum gyroscopics. Author's abstract

USSR   UDC: 538.56:519.25

DERYUGIN, I. A., KURASHOV, V. N., and MASHCHENKO, A. I.

"Optimizing Detection Systems of Quasiclassical Optical Signals"

Kiev, Izvestiya VUZ SSSR—Radioelektronika, No 9, 1972, pp 1154-1159

Abstract: The authors offer a simple method for optimizing binary quantum communications systems with direct use of the method of characteristic functions and the quasiclassical representation of optical fields. With the latter, a limited transition can be made into the classical region, based on the Glauber P-form in which the statistical operator of the radiation field can be written

$$\rho = \int P(\alpha)|\alpha\rangle\langle\alpha|d^2\alpha,$$

where $P(\alpha)$ is a nonnegative function defined over the entire comp plane of α. A simple binary system consisting of a photodetector and a threshold device is examined for the analysis. The optimal operating conditions for such a system are found by determining the threshold number of photoelectrons for a signal and noise of specified power and statistics. Some particular examples of the
1/2

USSR

UDC: 538.56:519.25

DERYUGIN, I. A., et al, _Izvestiya VUZ SSSR--Radioelektronika_, No 9, 1972, pp 1154-1159

optimization of binary systems for various signal and noise statistics are given. The authors find that the use of lasers in multimode operation degrades the characteristics of optical communications systems.

2/2

USSR   UDC: 621.373.029.7.001.5

DERYUGIN, I. A., ABDULLAYEV, R. A., KURASHOV, V. N., MIRZAYEV,
A. T., and NASTICH, V. N.

"Investigating the Radiation Statistical Characteristics of a
Laser Generating Several Axial Oscillations by the Photon Count
Method"

Moscow, Radiotekhnika i elektronika, No 8, 1972, 1622-1627

Abstract: On the basis of the quasi-classical approximation, an
analysis is made of experiments to determine the radiation sta-
tistics of a high-threshold laser, and the results are given of
the measurements of photon-count statistics of several lasers
operating in one transverse and several axial modes. A block dia-
gram of the apparatus used for the photon-counting, in which an
He-Ne laser operating at a wavelength of 6328 Å is the radiation
source, is given together with curves for the probability distri-
bution of the photon counts for each type of oscillation. On the
same axes for each of these curves, both the Poisson and negative
binomial distribution curves are plotted for the sake of compari-
son and show close agreement. Results of the experiments demon-
strate the effectiveness of the photon count for studying the
1/2

USSR   UDC: 621.373.029.7.001.5

DERYUGIN, I. A., et al, Radiotekhnika i elektronika, No 8, 1972,
pp 1622-1627

statistical characteristics of multiple frequency laser radiation.

2/2

Communications

USSR   UDC: 621.391.2.029.7

DERYUGIN, I. A., KURASHOV, V. N., and MASHCHENKO, A. I.

"Optical Amplification of Binary Signals in Communication Systems"

Abstract: Optimization of a system of binary signal communication, in which preamplification of the signal is obtained through a two-mode optical parametric amplifier to yield simple analytic solutions, is considered. The Bayes criterion of optimalness is used, and it is assumed that the correct solution corresponds to the situation of zero losses. In this optimized system, separation of the signal+noise and noise events is, as usual, made by an energy-sensitive receiver and a threshold device. The system characteristics then depend on the value of the threshold and the probability distribution of the appearance of photoelectrons at the detector output; this probability is determined by the statistical characteristics of the amplified signal. An expression for the threshold is obtained, and it is shown that the gain of the ideal noiseless amplifier for each pair of input signal power and noise values cannot exceed the difference between the initial

1/2

USSR   UDC: 621.391.2.029.7

DERYUGIN, I. A., et al, Radiotekhnika i elektronika, No 8, 1972,
pp 1618-1621

and asymptotic values of the error probability with fixed signal/
noise ratio. It is noted that investigations of the effect of a
parametric optical amplifier on detection characteristics can
similarly be made for other signal and noise statistics.

2/2

DERYUGIN I A

- 484 -

TECHNICAL TRANSLATION

FSTC-HT-23-2015-72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,
SEPTEMBER 1968

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: L. A. DERYUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY
           IMENI T.G. SCHEVCHENKO

Translated for FSTC by ACSI

NOTICE

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attempt has been made to verify the accuracy of any statement contained herein. This
translation is published with a minimum of copy editing and graphics preparation in order
to expedite the dissemination of information.

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DERYUGIN I A

- 487 -

TECHNICAL TRANSLATION

FSTC-HT-23-2015-72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE,
SEPTEMBER 1968

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: L. A. DERYUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY
IMENI T.G. SHEVCHENKO

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DERYUGIN, I. A.

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DERYUGIN, I. A., KURASHOV, V. N., MAR'YENKO, V. V.

"Signal Detection in a Maser"

Abstract: A study was made of signal detection in a ruby maser operating at
77° K. As a result of nonlinear interactions in the working medium of the
maser, variable magnetization appears at the modulation frequency which in-
duces a signal of corresponding frequency in the inductance coil encompassing
the resonator. The voltage on the coil was measured as a function of the modu-
lation coefficient, power of the AM signal and the pumping power of the maser.
Increasing the pumping power leads to equalization of the signal level popula-
tion as a result of which the signal induced in the coil drops to zero. A
further increase in pumping power inverts the spin system. The signal taken
from the coil at this time is amplified significantly until the maximum inver-
sion in the spin system is reached. The paramagnetic amplification coefficient
in the experiment was about 10 decibels.

1/1

DERYUGIN, I.A.

LASERS

JPRS 54341

28 October 1971

GENERAL MEETINGS OF BRANCHES OF THE UKRAINIAN ACADEMY OF SCIENCES

[Article: Kiev, Visnyk Akademii Nauk Ukrainskoi RSR, Ukrainian, No 7, 1971, pp 56-76]

On 19-20 July 1971, branches of the Ukrainian Academy of Sciences held a General Meeting to summarize the activities of scientific institutions in 1970 and the development of research in view of the decisions made by the XXIV Congress of the Communist Party of the USSR and the XXIV Congress of the Communist Party of Ukraine.

The meeting was attended by academicians and corresponding members of the Academy of Sciences of the Ukrainian SSR, by heads of problem committees, by directors of scientific institutions, branches of scientific research institutes, and universities, and by representatives of the Republic's ministries and departments.

Scientific papers were presented by academicians-secretaries of branches of the Academy of Sciences of the Ukrainian SSR, by heads of problem committees, and by scientists. Directors of scientific institutions and additional members of the Bureau of branches of the Academy of Sciences of the Ukrainian SSR were elected.

Mathematics, Mechanics and Cybernetics Branch

The General Meeting of the Mathematics, Mechanics, and Cybernetics Branch was opened by the Branch's academician-secretary, Yu. O. Mytropolskiy. He gave a basic summary of the work of branch establishments in 1970, and their projected assignments in view of the decisions made by the XXIV Communist Party Congresses.

- 1 -   [I - USSR - O]

that, during separation of electrons from deep levels, they sustain short-lived deformation -- displacement and fission. Photon excitation does not result in deformation of the levels and the regenerated deformed levels in the nucleus are, during electron excitation, equal to the levels of photon excitation; therefore the lines of a characteristic X-ray spectrum of both methods of excitation have the same frequency.

The speaker noted that the discovery of the elementary mechanism for appearance of characteristic X-ray spectrums enables differentiation of the true atomic electron structure from its short-lived localized deformation under outside influence of excitation, and also enables fruitful study of the physical-chemical phenomena which reflect the relationship between X-ray spectrums and the electron structure of the media.

The subject of Doctor of Physics and Mathematical Sciences I. A. [?] paper was "Coherence and Information." These two particular information characteristics of the photon field are caused by its statistical character. I. A. Daryukin showed that their importance is obvious, since the photon field can possibly be used as an information carrier. The speaker gave the basic theoretical and experimental problems in this area -- quantum theory of information; photon statistics and correlation of properties of a laser beam; theoretical problems of quantum optics. He described the research done at the quantum radio-physics department of Kiev State University.

The paper showed the possibility of constructing an information system, in which information is carried from the infra-red region of the spectrum into the visible region with the help of multi-quantum transitions; generated the study of laser-television systems without electronic-beam tubes, etc.; spoke of the development of laser systems which could, with the help of a simple indicator, directly determine three space coordinates and the relative speed of an object. This is very important in some special applications.

The paper "Laser Beam Generation and Non-linear Properties of Non-metal Crystals" was given by Doctor of Physics and Mathematical Sciences M. S. Brodin. The information of intensive laser beams with the environment causes a series of so-called non-linear occurrences. One of the most important of these is the ability of the intensive beam to narrow its channel. The basis for self-focusing is the non-linear change (enlargement) of the indicator of environmental change, which takes place under the influence of the powerful electronic field of the light wave.

- 7 -

105447r Photoelectric infrared polarimeter. Deryugin, I. A.; Kuznetsov, Yu. A.; Tron'ko, V. D. (USSR). *Opt. Spektrosk.* 1970, 28(2), 415–18 (Russ). The construction of a Faraday cell with $Y_3Fe_5O_{12}$ crystals is described. It made possible obtaining amplitude of polarization plane variation of 45° and higher in magnetic fields $10^1 - 10^3$ Oe and with time const. of $10^{-8} - \sim 10^{-7}$ sec.; operating output was 0.01 – 0.02 W. This modulator was used in photoelec. ir polarimeter. The theoretical anal. of its parameters is given. This type of cell enabled receiving large angles of oscillation at low magnetization fields.

The modulator enabled different ways of a change of oscillation angle of light polarization plane with time.   :M. Tichy

REEL/FRAME
19810419

1/2   013   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--FARADAY EFFECT LIGHT MODULATOR WITH CLOSED MAGNETIC CIRCUIT -U-

AUTHOR-(04)-DANILOV, V.V., DERYUGIN, I.A., MELISHCHUK, I.S., TRONKO, V.D.

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKHNIKA I ELEKTRONIKA (RADIO AND ELECTRONICS), 1970, NO 2,
PP 362-364
DATE PUBLISHED-------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--FARADAY EFFECT, LIGHT MODULATOR, MAGNETIC CIRCUIT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1858   STEP NO--UR/0109/70/000/002/0362/0364

CIRC ACCESSION NO--AP0130685
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0130685

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONSTRUCTION OF A FARADAY
MODULATOR BASED ON YIG WITH THE MAGNETOOPTIC ACTIVE SPECIMEN IN THE FORM
OF A CLOSED MAGNETIC CIRCUIT IS DESCRIBED. THIS MAKES IT POSSIBLE TO
IMPROVED THE MODULATOR PARAMETERS SIGNIFICANTLY.

UNCLASSIFIED

USSR   UDC: 621.375.82

VENKIN, G. V., DERYUGIN, L. H., PROTASOV, V. P., SOTIN, V. Ye.,
and CHEKHLOVA, T. K.

"Laser Using a Traveling Wave Ring Waveguide Resonator"

Translation: Oscillations are obtained from rhodamine 6Zh in a
traveling wave, ring resonator in the excitation of the second
harmonic in a neodymium laser. The ring resonator is a fine gela-
tin film on a glass rod. The concentration of the rhodamine in
the film is 10^{-3}-10^{-2} moles/liter. Authors' abstract

1/1

USSR

UDC 621.395.625.6

DERYUGIN, L.N., KOMOTSKIY, V.A., FRIDMAN, G.KH.

"Characteristics Of Thin-Film Metal Matrices For Laser Beam Inscription"

Abstract: The paper presents theoretical evaluations and the results of experimental studies of the sensitivity and resolution powers of thin-film metal matrices when inscription is performed by evaporation of a metal film under the influence of laser radiation. The limiting possibilities of the matrix are estimated with respect to sensitivity, resolution power, and speed of response. Within the scope of the work studies were also made of matrices of other types in which layers of colored polymer were used as an absorption layer, as well as combined layers consisting of a metal film and a layer of colored polymer. Brief comments are made on these studies. 4 fig. 3 tab. 9 ref. Received by editors, 25 Oct 1971.

1/1

DERYUGIN, L. N.

FOREIGN SCIENCE AND TECHNOLOGY CENTER

U.S. ARMY

ARMY MATERIEL COMMAND

FSTC-HT-23-364-72

RESONANT EXCITATION OF A PLANE DIELECTRIC WAVEGUIDE
THROUGH A SUPERCRITICAL LAYER BY A PLANAR WAVE

by

L. N. Deryugin, A. N. Marchuk, V. Ye. Sotin

COUNTRY: USSR

This document is a rendition of the
original foreign text without any
analytical or editorial comment.

Approved for public release; distribution unlimited.

USSR   UDC: 621.385:530.145.6:621.317.17

DERYUGIN, L. N., CHEKAN, A. V.

"Limitations on Resolution in the Method of Multiple-Beam Interferometry"

V sb. Radiofiz. i rasprostr. elektromagnitn. voln (Radio Physics and Propagation of Electromagnetic Waves--collection of works), Moscow, 1970, pp 115-120 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D549)

Translation: A general theory of multiple-beam interferometers is developed which covers spectral analyzers of the prism type, diffraction grating type, Michelson echelon type, etc. The proposed system is based on the theory of antennas with frequency beam scanning, and equivalent waveguide circuits of the interferometers. An expression is derived for resolution which is applicable to any multiple-beam interferometer. Ways of improving resolution are pointed out. Limiting resolution is determined for a fixed radiating aperture length, as well as for the case of an unrestricted increase in the length of the aperture and an unrestricted increase in Q for a fixed length. One illustration, bibliography of five titles. N. S.

1/1

USSR

UDC: 621.373:530.145.6

DERYUGIN, L. N., KULAKOV, B. P., NURMUKHAMETOV, V. K.

"Investigation of Transient Processes and Superregenerative Amplification in a Q-Switched Gas Laser"

V sb. Radiofiz. i rasprostr. elektromagnitn. voln (Radio Physics and Propagation of Electromagnetic Waves—collection of works), Moscow, 1970, pp 167, 171, pp 144-151 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D336)

Translation: The authors investigate transient phenomena which may be used as the basis for laser operation in the superregenerative mode. It is assumed that Q-switching is done by a step function law; the transient phenomena are determined by the external signal. An amplification formula is derived as well as the amplitude characteristic of the amplifier in the self-excitation mode. The results of experiments with a helium-xenon laser are presented. Conditions are discussed for obtaining high amplifications, particularly pumping methods. Bibliography of fifteen titles. N. S.

1/1

USSR

UDC: 621.396.67.095

DERYUGIN, L. N., MARCHUK, A. N., SOTIN, V. Ye.

"Radiation from a Flat Dielectric Waveguide"

Kiev, Izvestiya Vuzov SSSR--Radioelektronika, Vol 13, No 3, 1970, pp 309-116

Abstract: This is a follow-up article of an earlier one published by the same three authors in the journal named above (1967, 10, No. 2, p. 134.) The earlier article was devoted to consideration of a flat asymmetrical dielectric waveguide designed for the transmission of visible light and infrared waves with a dielectric layer between media of different dielectric constants. The present article considers the radiation from a similar waveguide in a delaying medium with a second layer at some specified distance from the first. Beginning with the Huygens principle, the authors find a relationship for the radiation angle in terms of the index

1/2

USSR

DERYUGIN, L. N., et al, Izvestiya Vuzov SSSR--Radioelektronika,
Vol 13, No 3, 1970, pp 309-316

of refraction in one of the media and the delay in the waveguide.
The radiation coefficient and the phase constant of the E and H
surface waves are computed. The gain factor is computed and a
condition for maximum gain is found. Through the use of an ex-
ample, the authors show how the derived equations can be used to
calculate the field distribution along the radiating waveguide.

2/2

- 197 -

USSR

UDC 621.372.8

DERYUGIN, L. N., MARCHUK, A. N., SOTIN, V. YE.

"Resonance Excitation of a Plane Dielectric Waveguide Through a Plane Wave Supercritical Layer"

Kiev, Izvestiya VUZ -- Radioelektronika, Vol 13, No 8, 1970, pp 973-980

Abstract: This paper is the continuation of an earlier one written by the same authors investigating an asymmetrical dielectric waveguide consisting of a conducting layer between two media of given dielectric constants. The present paper considers the excitation of this waveguide. Assuming the incident wave to be polarized normal to the plane of incidence, the authors write the equations for the electric fields in each medium of four layers -- the fourth layer is the one providing the excitation -- and find the magnetic field components of the wave by using the Maxwell equation. For waves polarized along as well as normal to the plane of incidence, the authors find that the maximum achievable value of the amplitude in the resonator is inversely proportional to the average dielectric loss angle in the resonator layers. The system is tuned to resonance either by changing the angle of incidence of the wave or by varying the frequency of the exciting wave; to obtain maximum field amplitude in the resonator, the

1/2

USSR

DERYUGIN, L. N., et al., Izvestiya VUZ -- Radioelektronika, Vol 13, No 8, 1970, pp 973-980

system is tuned by varying the thickness of the supercritical layers. The authors assert that such resonance systems can be used for measurement of small losses in thin films or nonlinear transformations in relatively small power sources.

2/2

1/2   026   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--RADIATION FROM A PLANE DIELECTRIC WAVEGUIDE -U-

AUTHOR-(03)-MARCHUK, A.N., SOTIN, V.YE., DERYUGIN, L.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. VUZ. RADIOELEKTRONIKA, VOL. 8, MAR. 1970, P. 309-316

DATE PUBLISHED----MAR70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., NAVIGATION

TOPIC TAGS--DIELECTRIC WAVEGUIDE, DIELECTRIC MATERIAL, SURFACE WAVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0543   STEP NO--UR/0452/70/008/000/0309/0316

CIRC ACCESSION NO--AP0124238
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0124238
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE EMISSION OF
 SURFACE WAVES FROM AN EXTENDED SEGMENT OF A PLANE DIELECTRIC WAVEGUIDE
 INTO A CONTINUOUS DIELECTRIC MEDIUM LOCATED AT A GIVEN DISTANCE FROM THE
 WAVEGUIDE AND HAVING A LARGER REFRACTIVE INDEX. THE RADIATION FACTOR
 AND THE PHASE CONSTANTS OF SURFACE E AND H WAVES ARE CALCULATED, AND THE
 DIRECTIONAL PROPERTIES OF THE EMISSION ARE ANALYZED. THE OPTIMAL
 DISTANCE BETWEEN THE DIELECTRIC MEDIUM AND THE WAVEGUIDES IS CALCULATED
 FROM THE VIEWPOINT OF MAXIMUM GAIN.

USSR   UDC 621.372.54

DERZHANSKIY, F.B., KUSTOV, O.V.

"Investigation Of One Method Of Realization Of Linear Quadrupoles Of The Second Order"

Abstract: The paper describes a method for realization of linear electrical circuits as parametric devices. The method arises directly from the theory of the solution of differential equations and makes it possible to construct systems with stable characteristics for which the frequency standard of contemporary generators of harmonic oscillations is used. It is possible to extend the method described to the problem of constructing a wide class of linear quadrupoles: resonators, systems of different filters, matched filters for signals of more complex forms than a segment of a harmonic oscillation, and others. The method makes it possible to use standard integral microcircuits produced by the electronics industry, during development of the principal functional units of contemporary communication systems. 3 figs. 3 ref. Received, 23 October 1970.

1/1

DERZHAVIN, O.M.

Satellite communications

Satellite communications

STABILITY OF A MULTI-STATION SATELLITE COMMUNICATIONS SYSTEM

[Article by Candidate of Engineering Sciences Deteant O. M. Derzhavin, and Graduate Student _____, and Table of Contents _____ moskovskogo ordena Lenina energeticheskogo instituta; Radiotekhnika i Elektronika, Russian, No 95, 1972, Moscow, pp 160-170]

The application of active rebroadcasters (RTR) installed in artificial Earth satellites (ISZ) opens great possibilities in the organization of communications of ground stations. The use of the Soviet communications satellite "Molniya-1" gave the opportunity to introduce the "Orbita" long-range communications system into the structure [1]. In systems with a multi-station access the signals radiated by the transmitters (PRD) of the stations are received by the on-board antenna of the RTR, amplified, and again radiated to the Earth. The receiver (PRM) of any station if necessary may receive signals of all stations, separating the information of interest to it [2, 3]. The difference in the conditions of communications of the stations with the satellite, because of the fact that they are separated by great distances, and the change of these conditions in the process of the motion of the satellite in orbit, leads to the fact that the signals arriving at the input of the rebroadcaster from various stations are strongly distinguished in magnitude, and their ratio varies in time. In the use of frequency division of signals and the general column of the RTR, as a consequence of the non-linearity of the characteristics of the RTR, a reduction of the signals of individual stations occurs in it, which leads to a deterioration of the summary signal/noise ratio at the input of the receivers of the ground stations and, in the final analysis, to a decrease in the transmission capability of the system.

We may avoid the given phenomenon by means of equalizing the levels of the signals from various stations at the input of the RTR. The given problem may be solved by different methods, such as, for example, by means of organization of a system with a radiobeacon in the RTR [4] (Figure 1).

- 1 -

[I - USSR - A]

So: JPRS 59755

9 August 197...

CARL

USSR   .   UDC: 621.381.41

ANTSIFEROV, V. V., DERZHI, N. M., PIVTSOV, V. S., UGOZHAYEV, V. D.,
FOLIN, K. G.

"Selection and Retuning Ruby Laser Frequencies in the Giant Pulse
Mode"

Novosibirsk, Avtometriya, No 5, 1972, pp 94-97

Abstract: Results are given of an experimental investigation of
three-mirror and four-mirror variants in a superregenerative laser
amplifier using an industrial ruby crystal with sapphire termina-
tions, 12 or 18 cm long and 7 mm in diameter. In a second laser,
also part of the experimental apparatus, the active element was
also a ruby crystal with a sapphire envelope 12 cm long and a dia-
meter of 7 or 9 mm. The basic idea of the apparatus is that the
radiation of the first laser is applied to the second to produce
a giant pulse. Radiation under this system was recorded with a
photoelement type FEK-15, a type I2-7 oscillograph, and a Fabry-
Pérot standard with a limited resolution of $2 \cdot 10^{-3}$ Å. A diagram
of the apparatus is given, together with an oscillogram of the
giant pulse and an interferogram of the combined spectra of the
two lasers. It is noted that the possibility of controlling the
1/2

USSR   UDC: 621.381.41

ANTSIFEROV, V. V., et al, Avtometriya, No 5, 1972, pp 94-97

duration of the giant pulse by changing the parameters of the
first laser's resonator may be useful in several applications.

2/2

- 35 -

USSR

MUROMTSEV, G. S., DERZHINSKIY, A. R., KURAKHTANOVA, T. I., DUBOVAYA, L. P.,
and RUDAKOV, O. L., All Union Scientific Research Institute of Phytopathology,
Bol'shiye Vyazemy, Moscow Oblast

"Deep Cultivation and Antibiotic Activity of the Mycoparasite Darluca filum"

Abstract: When grown in deep culture, the imperfect fungus Darluca filum
(Biv-Bern) Cast., a hyperparasite of rust fungi, can synthesize at least four
intracellular fungicidal antibiotics. The fungus grows on solid and liquid
media with certain combinations of nitrogen and carbon sources, the most favor-
able being those with soybean meal (or corn extract), and glucose starch. In
deep culture, D. filum synthesizes antibiotics that suppress the growth of
yeasts and mycelial fungi of the genera Alternaria, Beauveria, Botrytis,
Cephalosporium, Cladosporium, Cryptococcus, Endothia, Fusarium, Gliocladium,
Hansenula, Helminthosporium, Kabatiella, Monilia, Nematospora, Neurospora,
Oospora, Penicillium, Pestalotia, Piricularia, Pichia, Pullularia, Rhizopus,
Trichoderma, Verticillium, Torulaspora, Schwanniomyces, Debaryomyces, Endo-
myces, Candida, and Saccharomyces. Media containing glucose and peptone or
1/2

USSR

MUROMTSEV, G. S., Sel'skokhozyaystvennaya Biologiya, Vol 5, No 4, 1970, pp 579-582

soybean meal, combined with various carbon sources, are best for synthesizing the antibiotics.

2/2

USSR

UDC 621.311.016.352:631.3

TSUKERNIK, L. V., DERZSKIY, V. G.

"Set of Programs for Analyzing the Stability of Power Systems on a Digital Computer Considering the Error in the Initial Information and Realization of the Calculation Conditions"

V sb. Probl. tekhn. elektrodinamiki (Problems of Technical Electrodynamics -- collection of works), vyp. 25, Kiev, Naukova Dumka Press, 1970, pp 71-76 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye213)

Translation: Insufficient accuracy and completeness of the initial data require a statistical approach to analysis of the stability of power systems. The problem is solved by the method of statistical simulation on the Ural-2 digital computer using a set of programs. The dynamic stability of an actual power system is analyzed considering inaccuracy of the initial information. There are 2 illustrations and a 5-entry bibliography.

1/1

- 115 -

1/2   026   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--EXCITATION OF A HELIUM NEON MIXTURE IN A HOLLOW CATHODE. PART II
   -U-
AUTHOR-(02)-KAGAN, YU.M., DESAI, SH.K.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, OPTIKA I SPEKTROSKOPIYA; APRIL 1970, PP 650-3

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EMISSION SPECTRUM, ELECTRON STRUCTURE, HELIUM, NEON,
   CALCULATION, ARC DISCHARGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0709   STEP NO--UR/0051/70/000/000/0650/0653

CIRC ACCESSION NO--AP0134444
--------------------------------UNCLASSIFIED-------------------------------

CIRC ACCESSION NO--AP0134444
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE CONCERNS THE RATE
EQUATIONS FOR THE LEVELS WITH N EQUALS 3 OF HELIUM AND 2P PRIME5 3P OF
NEON. SATISFACTORY AGREEMENT BETWEEN CALCULATED AND EXPERIMENTALLY
DETERMINED MEASUREMENTS OF THE INTENSITY OF THE SPECTRAL LINES WAS
FOUND. THE QUESTION OF POPULATION INVERSION OF THE 3S SUB2 AND 2P SUB4
LEVELS AND 2S SUB2 AND 2P SUB4 LEVELS OF NEON WAS ALSO CONSIDERED.
POPULATION INVERSION AT THESE LEVELS OVER THE ENTIRE RANGE OF PRESSURES
AND DISCHARGE CURRENTS STUDIED WAS DETERMINED.

UNCLASSIFIED

USSR

KAGAN, YU. M., DESAI, SH. K.

"Excitation of a Helium-Neon Mixture in a Hollow Cathode. Part II"

Leningrad, Optika i Spektroskopiya; April 1970, pp 650-3

ABSTRACT: The article concerns the rate equations for the levels with $n = 3$ of helium and $2p^5 3p$ of neon. Satisfactory agreement between calculated and experimentally determined measurements of the intensity of the spectral lines was found. The question of population inversion of the $3s_2$ and $2p_4$ levels and $2s_2$ and $2p_4$ levels of neon was also considered. Population inversion at these levels over the entire range of pressures and discharge currents studied was determined.

The article includes 3 equations and 4 tables of data. There are 10 bibliographic references.

1/1

TITLE--EPIDEMIOLOGY OF INTESTINAL COLI INFECTION IN YOUNG CHILDREN -U-

AUTHOR-(05)-BELIKOVAALDAKOVA, V.D., TABOLIN, V.A., BYCHENKO, V.D.,
   DESHCHEKINA, M.F., KARASEVA, K.G.
COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR
   6, PP 9-14
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEDIATRICS, INFECTIOUS DISEASE, DIGESTIVE SYSTEM DISEASE,
   SMALL INTESTINE, BACTERIAL DISEASE, EPIDEMIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0358   STEP NO--UR/0016/70/000/006/0009/0014

CIRC ACCESSION NO--AP0126114
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0126114

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MATERIAL OBTAINED DEMONSTRATED
THAT IN CHILDREN UNDER TWO YEARS OF AGE INTESTINAL COLO INFECTION
CONSTITUTED ONLY 5-6PERCENT OF THE WHOLE SUM TOTAL OF ACUTE INTESTINAL
DISEASES. CLINICALLY MANIFEST FORMS USUALLY OCCURRED IN ENFEEBLED
CHILDREN; IN HEALTHY CHILDREN THIS INFECTION WAS MOSTLY EXPRESSED IN THE
CARRIER STATE. TO ASCERTAIN THE ROLE OF THE DOSE OF THE CAUSATIVE
AGENT IN THE EPIDEMIOLOGY OF INTESTINAL COLI INFECTION THE AUTHORS
ANALYGED COMPARATIVE BY THE EPIDEMIOLOGICAL VALUE OF VARIOUS WAYS OF
TRANSMISSION OF THE INFECTIVE AGENT. FOOD FACTOR WHICH PROVIDED
PENETRATION OF A GREATER DOSE OF THE MICROBE IN TO THE ORGANISM PROVED
TO PLAY A LEADING ROLE. IN CONCLUSION IT WAS SHOWN THAT OF THE
CARDINAL IMPORTANCE IN THE PROPHYLAXIS OF INTESTINAL COLI INFECTION
SHOULD BE THE MAINTENANCE OF HIGH SANITATION STANDARD IN CHILDREN'S
COLLECTIVE BODIES, PARTICULARLY IN THE GROUPS OF ENFEEBLED CHILDREN.
FACILITY: I. MOSKOVSKIY MEDITSINSKIY INSTITUT IM. SECHENOVA.
FACILITY: II. MOSKOVSKIY MEDITSINSKIY INSTITUT, DETSKAYA KLINICHESKAYA
BOL'NITSA IM. FILATOVA.

UNCLASSIFIED

1/2   020   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--THEORY OF CONTRACTION OF ASYNCHRONOUS MUSCLES -U-

AUTHOR--DESHCHEREVSKIY, V.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, BIOFIZIKA, NO 1, 1970, PP 53-61

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCLE PHYSIOLOGY, MAMMAL, INSECTA, ANATOMY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0847   STEP NO--UR/0217/70/000/001/0053/0061

CIRC ACCESSION NO--AP0121479
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0121479
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETIC THEORY OF CONTRACTION
OF STRIATED MUSCLES PREVIOUSLY FORMULATED FOR SKELETAL MUSCLES OF
VERTEBRATES ALSO DESCRIBES THE AUTO OSCILLATORY CONTRACTIONS OF THE WING
MUSCLES OF INSECTS, WITH DUE REGARD FOR THEIR STRUCTURAL
CHARACTERISTICS. THE THEORY IS IN REASONABLE QUANTITATIVE AGREEMENT
WITH THE EXPERIMENTAL DATA. THE "KINETIC MODEL" EXPLAINS FOR THE FIRST
TIME A NUMBER OF OTHERWISE PUZZLING FACTS, G.G., THE CHANGE IN FREQUENCY
PARAMETERS OF THE OSCILLATIONS AFTER GLYCINERATION OF THE MUSCLE. THE
SIMILARITY OF THE "MOLECULAR PARAMETERS" OF THE MODEL IN GOING FROM THE
SKELETAL MUSCLES OF VERTEBRATES TO THE WING MUSCLES OF INSECTS INDICATES
THAT THEY HAVE THE SAME ELEMENTARY CONTRACTILE MECHANISMS.
FACILITY: INSTITUTE OF BIOLOGICAL PHYSICS, ACADEMY OF SCIENCES USSR.

UNCLASSIFIED

Molecular Biology

USSR

DESHCHEREVSKIY, V.I., ZHABOTINSKIY, A.M., SEL'KOV, YE.YE., SIDORENKO, N.P.,
and SHNOL', S.E., Institute of Biophysics, Academy of Sciences USSR

"Oscillating Biological Processes on the Molecular Level"

Abstract: One important task of modern biophysics is to investigate condi-
tions under which oscillations may occur on various levels. Some oscilla-
tions represent a normal functional state of a system (myocardial fibers),
while other oscillations represent an abnormal (pathological) state. Oscil-
lating processes have been investigated in single-enzyme, multi-enzyme, and
model catalytic systems, in colloidal systems, and in a system with a strict
structural organization: striated muscle. A catalytic reaction is a repeti-
tive cyclic process: each enzyme molecule forms a complex with the substrate,
induces a reaction, and returns to its initial state. Solutions of actomy-
osin display configurational oscillations involving reversible shifts in
the ATPase activity in the absence of the ATP, which arrests these oscilla-
tions. Multi-enzyme systems in cells involve hundreds of biochemical reac-
tions and various control mechanisms, which regulate the activity of enzymes,
the speed of their synthesis and destruction, the permeability of biological
membranes, and so on. These mechanisms can also disrupt the equilibrium
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USSR

of biochemical systems and cause fluctuations in the concentration of reacting substances. Liquid-phase models of enzymatic reactions yield reproducible results and are used to investigate the spatial synchronization of oscillations. A specific situation arises in mechanical chemistry: the enzymatic breakdown of ATP changes the mechanical state of the muscle, which in turn affects the speed of this reaction. Further studies of oscillating processes may contribute to our understanding of the following phenomena: the mechanism of enzymatic catalysis; the nature of control mechanisms in multi-enzyme systems; the molecular kinetic basis of biological motility; and the cause of morphological organization in initially homogeneous systems.

2/2

USSR

DESHCHEREVSKIY, V. I., Institute of Biological Physics, Academy of Sciences
USSR

"Theory of Contraction of Asynchronous Muscles"

Moscow, Biofizika, No 1, 1970, pp 53-61

Abstract: The kinetic theory of contraction of striated muscles previously
formulated for skeletal muscles of vertebrates also describes the auto-oscil-
latory contractions of the wing muscles of insects, with due regard for their
structural characteristics. The theory is in reasonable quantitative agree-
ment with the experimental data. The "kinetic model" explains for the first
time a number of otherwise puzzling facts, e.g., the change in frequency para-
meters of the oscillations after glycineration of the muscle. The similarity
of the "molecular parameters" of the model in going from the skeletal muscles
of vertebrates to the wing muscles of insects indicates that they have the
same elementary contractile mechanisms.

1/1

USSR

VARLAMOV, I.V., DESHEVOY, A.S., KALADZE, M.K., PETRUSEVICH, V.A., RZHANOV,A.YE.

UDC 621.383.52.072.1

"Measurement Of The Impedance Of Photoresistors In The Pinch-Off Region And At The Section Of Negative Differential Resistance"

Translation: A device for measurement of impedance which uses the method of phase detection is described, and some of the measured parameters of the 4-layer structures at the section with negative resistance of the volt-ampere characteristics are presented. 4 ill. 5 ref. I.V.

1/1

USSR   UDC595.771-12;616.9-036.2

DUBITSKIY, A. M., DESHEVYKH, N. D., LEVCHENKO, N. G., and DANEBEKOV, A. YE.,
Institute of Zoology, Academy of Sciences, Kazakh SSR

"A Method of Studying Natural Epizootics of Blood-Sucking Mosquitoes"

Abstract: To use pathogens as a means of controlling parasites and pests
requires familiarity with the natural course of epizootics among them.
Since disease of mosquito larvae generally have a mosaic structure, different
habitats must be investigated. Larvae should be sampled from six characteristic
types of sections of ponds (open, shaded, overgrown with aquatic vegetation,
not overgrown, deep shallow). Mosquitoes are collected from a number of
sites relatively close together to determine the degree of infestation or
infection and then inspected and dissected to assess the intensity of the
disease. The procedure should be repeated every month throughout the year
to study seasonal patterns. Analysis of the results of investigations of
the different segments of a single infected population gives some idea of
the distribution, lethality and phase of the disease in which the larvae
die. The initial symptoms of the disease, their development, and increase
in severity combined with the subsequent   death of a certain number of
1/2

USSR

DUBITSKIY, A. M., et al., Meditsinskaya Parazitologiya I paraziratnyye
Bolezni, No 6, 1971, pp 701-704

individuals of the population, make it possible to determine the course and
severity of the disease.

2/2

USSR   UDC 576.893.195.095.38:576.895.771(574)

LEVCHENKO, N. G., DUBITSKIY, A. M., and DESHEVYKH, N. D., Institute of
Zoology, Academy of Sciences, Kazakh SSR

"Detection of Microsporidia in Larvae of Blood-Sucking Mosquitoes in
Southeastern Kazakhstan (a Preliminary Report)"

Abstract: Microsporidians were found for the first time in the larvae of
some mosquito species along the middle and upper reaches of the Ili River in
Kazakhstan: Thelohania opacita in Aedes montchadskyi and A. flavescens and
Thelohania legeri in Anopheles hyrcanus. The species of microsporidians
found in Aedes caspius caspius and Culex modestus larvae has not yet been
conclusively determined. Diseased larvae generally were found in shallow
bodies of water where the temperature was over 15°C. The protozoans are
now being investigated as a possible means of controlling mosquitoes.

1/1

USSR   UDC 691.327:620.17

DESOV, A. Ye., Doctor of Technical Sciences, Professor, Honored Scientist
and Technical Worker of the Russian Soviet Federative Socialist Republic

"Macrostructural Hypothesis of the Compression Strength of Concrete and
Results of an Experimental Verification"

Moscow, Beton i Zhelezobeton, No 7, Jul 72, pp 28-31

Abstract: A macrostructural hypothesis of the compression strength of con-
crete is suggested on the basis of its possible destructive character by
compression with elimination of surface friction. The general character of
the development and the relaxation of structural stresses are described by
an exponential dependence containing the basic parameters of the resistance
of the concrete aggregates to splitting, the tensile strength of the cement
mortar and stone, and the adhesion between the inert concrete aggregate and
the cement stone or mortar. Structural stresses due to the shrinkage of
concrete and their relaxation degree in time are also considered. Practical
conclusions made on the basis of the formulated hypothesis were confirmed
by experiments carried out with concrete on Portland cement brand 500 and
with granite chip. The effect of the shrinkage in time on the tensile
strength and structural stresses and the experimental and theoretical com-
pression strength of samples of different dimensions are shown. Four illus-
tr., three tables, six formulas, three biblio. ref.
1/1
                               - 48 -

USSR   UDC:691.32:539:411

DESOV, A. Ye., Doctor of Technical Sciences

"New Method of Compression Testing of Concrete"

Moscow, Beton i Zhelezobeton, No. 1, Jan 71, pp. 6-7

Abstract: In order to eliminate the influence of surface friction on the
results of compressive strength testing of concrete specimens, inserts
are placed around the specimens in the strength testing machine. The
two inserts are metal plates 16 mm thick, with soft rubber 4-5 mm thick
glued to the surface and metal cubes 2 × 2 × 2 cm arrayed on the surface
of the rubber with a spacing of 1-2 mm in each direction. Several
series of tests have been performed using this method, indicating that
accurate results showing the true compressive strength of the concrete
are produced. When this method is used, the necessity of using two types
of specimens in the form of cubes and prisms is eliminated.

1/1

Graphite

USSR

UDC 541.135.5-183:547

ATANASOSKI, R. T., DRAZHICH, D. M., and DESPICH, A. R., Institute of Chemical,
Technological, and Metallurgical Studies, Belgrade, Yugoslavia

"Capacitance of Electric Double Layer on Pyrolytic Graphite"

Moscow, Elektrokhimiya, Vol 6, No 8, Aug 70, pp 1229-1231

Abstract: The influence of anisotropy of graphite crystals on the differential
capacitance of the electric double layer of a graphite electrode upon contact
with an inert electrolyte was studied at various electrode potentials. The ex-
periments were performed on polycrystalline pyrolytic graphite with clear orient-
ation of the crystallite. The mean deviation between crystallite axis and pre-
cipitation axis was 21°.

1/1

USSR

URLI, N.B., DESNITSA, U.V.

"Effect Of Thermal Treatment And Doping On The Photoconductivity And Characteristics Of p-n Junctions In Cadmium Telluride"

Translation: The effect was studied of annealing in air for 45 min. at temperatures from 200 to 450° C on the dark conduction, photoconductivity, and photo emf of p-type CdTe with various initial resistivities (4. 10^3 and 100 ohm.cm). The dark conduction always decreases with the annealing temperature. The highest photoconductivity and photo emf was observed after annealing at 400° C for specimens with $\rho = 4.10^3$ ohm.cm and not above 250° C for specimens with $\rho = 100$ ohm cm. The rise time of the photocurrent is ~60 microsec, and the decay is 750 microsec. The results of the measurements show that very photosensitive and satisfactorily high-speed photoconductors were produced from CdTe by the method of thermal treatment in air. Surface-barrier photodiodes resistant to γ-irradiation are produced by diffusion of indium into p-type material and by deposition of gold in a vacuum. 3 ill. 7 ref. I.V.
1/1

TITLE--FUSIBILITY OF SALT SYSTEMS CONTAINING URANIUM TRICHLORIDE -U-

AUTHOR-(05)-DESYATNIK, V.N., MELNIKOV, YU.T., NICHKOV, I.F., RASPOPIN,
   S.P., MAKOSOV, V.V.
COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(3), 247-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--URANIUM COMPOUND, CHLORIDE, MOLTEN CHLORIDE, FUSED SALT, LEAD
   COMPOUND, EUTELTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1577   STEP NO--UR/0089/70/028/003/0247/0249

CIRC ACCESSION NO--AP0120356
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0120356   UNCLASSIFIED   PROCESSING DATE--23OCT:

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHASE DIAGRAM OF THE UCL
SUB3-PBCL SUB2-UCL SUB4 SYSTEM, WITH POLYTHERMAL SECTIONS FOR
100-800DEGREES IS PRESENTED. THE UCL SUB3-PBCL SUB2 SYSTEM ALWAYS
CONTAINS UCL SUB4 AS A RESULT OF ITS FORMATION (TOGETHER WITH PB) IN TH
INTERACTION OF UCL SUB3 AND PBCL SUB2; HENCE, IT SHOULD BE REGARDED AS
TERNARY SYSTEM, WITH 2 EUTECTICS CONTG. 11 AND 25PERCENT UCL SUB3 AND
AT 473 AND 478DEGREES, RESP., AND WITH A COMPD. 4PBCL SUB2. UCL SUB3,
AT 512DEGREES.

UNCLASSIFIED

1/2   020   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--PHASE DIAGRAM OF THORIUM TETRACHLORIDE URANIUM TRICHLORIDE AND
PLUTONIUM TRICHLORIDE URANIUM TRICHLORIDE SYSTEMS -U-
AUTHOR-(05)-DESYATNIK, V.N., NICHKOV, I.F., PORODNOV, P.T., RASPOPIN,
S.P., SKIBA, O.V.
COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TSVET. MET. 1970, 13(1), 101-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--PHASE DIAGRAM, EUTECTIC MIXTURE, THORIUM COMPOUND, URANIUM
COMPOUND, PLUTONIUM COMPOUND, CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0628   STEP NO--UR/0149/70/013/001/0101/0103

CIRC ACCESSION NO--AT0137713
                              UNCLASSIFIED

CIRC ACCESSION NO--AT0137713
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHASE DIAGRAMS OF THE BINARY
SYSTEMS THCL SUB4 UCL SUB3 AND PUCL SUB3-UCL SUB3 WERE INVESTIGATED.
THCL SUB4-UCL SUB3 FORMS THE COMPD. 3UCL SUB3. THCL SUB4 UNSTABLE AT
GREATER THAN 750DEGREES WHICH FORMS A CUTECTIC MIXT. WITH THCL SUB4.
THE ONLY EUTECTIC IN THE THCL SUB4-UCL SUB3 SYSTEM IS AT 30 MOLE PERCENT
UCL SUB3 AND 632DEGREES. IN THE PUCL SUB3-UCL SUB3 SYSTEM A COMPD.
UNSTABLE AT GREATER THAN 700DEGREES (3UCL SUB3. PUCL SUB3) FORMS A
EUTECTIC MIXT. WITH PUCL SUB3. THE EUTECTIC IN THE PUCL SUB3-UCL SUB3
SYSTEM IS AT 44 MOLE PERCENT UCL SUB3 AND 496DEGREES.   FACILITY:
URAL POLITEKH. INST., SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

DESYATNIK, V. N., KURBATOV, N. N., RASPONIN, S. P., and CHERVINSKIY, YU. F.,
Ural Polytechnical Institute, Sverdlovsk

"Phase Diagrams of Binary Systems Containing Uranium Tetrachloride and Alkali
Metal Chlorides""

Translation: The phase diagrams of uranium tetrachloride and alkali metal
chlorides were studied by differential thermal analysis. It was demonstrated
that uranium tetrachloride forms the following compounds with alkali metal
chlorides: $2MeCl \cdot UCl_4$ (where Me = Li, Na, K, Rb, Cs), $MeCl \cdot UCl_4$, and $3MeCl \cdot
UCl_4$ (where Me = Rb, Cs). Two eutectic points were found for the $LiCl-UCl_4$
system, corresponding to 31 and 43 mol % UCl_4 content at 415 ± 2 and $400 \pm
2°C$. In the $NaCl-UCl_4$ system the eutectic mixture melts at $368 \pm 2°C$ and
corresponds to a 50 mol % UCl_4 content. The eutectic points of the $KCl-UCl_4$
system correspond to 26 and 51 mol % UCl_4 concentrations at 562 ± 2 and $335
\pm 2°C$ respectively. In the $RbCl-UCl_4$ system, two eutectic points were deter-
mined for 22 and 36 mol % UCl_4 concentrations at melting points 535 ± 2 and
1/2

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USSR

DESYATNIK, V. N., et al., Zhurnal Fizicheskoy Khimii, Vol 46, Vyp 8, 1972, p 2159

$345 \pm 2°C$. In the $CsCl-UCl_4$ system, the eutectic mixtures melt at 522 ± 2 and $356 \pm 2°$ C, and correspond to 17 and 63 mol % concentrations of UCl_4 respectively.

2/2

USSR

UDC 661.143

DESYUK, V. G., KAPLENOV, I. G., and MAYOROV, M. I.

"Photoelectric Registration of Total Light "

Sb. nauch. tr. VNII lyuminoforov i osobo chist. veshchestv (Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Extra Pure Substances), 1971, vyp 6, pp 149-151 (from RZh-Khimiya, No 17 Oct 72, Abstract No 17L172)

Translation: By using a converter which changes an input signal to pulses, the total light can be registered with respect to attenuation in 3-5 minutes, which is a considerable gain over the photographic method. The installation can be used for determining other integrated luminescence characteristics.

1/1

USSR   UDC 661.143.017

KRONGAUZ, V. G., KHALUPOVSKIY, M. D., and DESYUK, V. G.

"Thermoluminescence of Halophosphate Phosphors Due to Mercury Adsorption"

Sb. nauch. tr. VNII lyuminoforov i osobo chist. veshchestv (Collection of
Scientific Works of All-Union Scientific Research Institute for Phosphors and
Ultrapure Substances), 1971, vyp. 6, pp 19-22 (English summary) (from Kh-
Khimiya, No 16, 25 Aug 72, Abstract No 16L137 from summary)

Translation: The authors investigated the thermally stimulated luminescence
of halophosphate luminescent materials after the technological operations of
fabricating a fluorescent lamp. They found high-temperature thermoluminescence
with a maximum at $\sim 320^\circ$ C; the interaction of the phosphor with mercury vapor
sufficed to cause it to appear without photoexcitation. Similar luminescence
is also observable on heating of the specimens in air. This effect is due
to the presence of Mn^{3+} in the luminescent materials.

1/1

USSR   UDC: 621.375.8

DETINKO, V. N.

"Theory of Reactive Modulation Amplifiers for the Microwave Band"

Translation: The theory of modulation amplifiers for the SHF range is considered. Analysis of wave processes is substituted for a strict electrodynamic solution. The results of analysis of transfer and absorbing resonators are of independent interest and may be used in calculating cavity resonators. Resumé.

1/1

USSR

NIKIFOROV, A. N. and DETINKO, V. N.

UDC: 621.375.7

"Regenerative Modulation Amplifier"

Kiev, Izvestiya VUZ - Radioelektronika, vol. 14, No. 5, 1971,
pp 552-559

Abstract: The purpose of this paper is to demonstrate the possi-
bility of using means other than the capacitance of reactive ele-
ments varying with the pumping voltage or signal voltage in para-
metric amplifiers. The authors propose the use of modulation by
the signal of a capacitance in the pumping circuit as the mechan-
ism for parametric regeneration. In this connection, the article
considers the possibility of designing a regenerative modulation
amplifier. Using the equivalent circuit of such an amplifier and
assuming that the attenuation in the circuit is negligible com-
pared with the resonance frequency of the circuit, the authors de-
rive a differential equation for the oscillatory process in the
tuned circuit and find an approximate solution for it. A double-
tuned regenerative modulation amplifier is also examined. It is
asserted that this means of amplification indicates a new possi-
bility of regenerative amplifier design.

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- 4 -

USSR

LEVDIKOVA, T. L., DETINKO, V. N.

"Multisection Systems Based on an Evanescent Waveguide"

Abstract: A method is proposed for calculating the characteristics of a multiple-loop system based on an evanescent waveguide of rectangular cross section with identical transverse posts having small end clearances with identical spacing. Resonance frequencies and resonance properties are determined for systems made up of two and three coupled evanescent waveguide resonators.

1/1

TITLE--SCATTERING OF WAVES ON STATISTICAL CLUSTERS OF INHOMOGENEITIES -U-

UNCLASSIFIED   PROCESSING DATE--30OCT70

AUTHOR--DETINKO, V.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. VUZ. FIZIKA, VOL. 13, NO. 1, 1970, P. 125-128

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTROMAGNETIC WAVE SCATTERING, ATMOSPHERIC ELECTROMAGNETIC EFFECT, ATMOSPHERIC RADIATION, MATHEMATIC MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0068

STEP NO--UR/0139/70/013/001/0125/0128

CIRC ACCESSION NO--AP0111262

UNCLASSIFIED

CIRC ACCESSION NO--AP0111262
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEMONSTRATION OF A WRONG APPROACH
 TO THE PROBLEM OF SCATTERING OF ELECTROMAGNETIC WAVES ON PASSIVELY
 REFLECTING CLUSTERS SUCH AS HYDROMETEORS, ATMOSPHERIC INHOMOGENEITIES,
 SEA SURFACE AND OTHERS, BY TREATING THEM AS ACTIVE RADIATORS. RADIATION
 OF AN ACTIVELY RADIATING CLUSTER IS ANALYZED AND ILLUMINATION OF A
 PASSIVELY REFLECTING CLUSTER IS DISCUSSED. THE ROLE PLAYED BY THE
 DIMENSIONS OF THE INHOMOGENEITIES FORMING THE CLUSTER IS EXAMINED.
  FACILITY: TOMSKII GOSUDARSTVENNYI UNIVERSITET, TOMSTK USSR.

UNCLASSIFIED

UNCLASSIFIED

TITLE--HEAT TRANSFER BY RADIATION OF NON GRAY GAS WITH GRAY SURFACES -U-

PROCESSING DATE--20NOV70

AUTHOR--DETKOV, S.P.

COUNTRY OF INFO--USSR

SOURCE--INZHENERNO-FIZICHESKIY ZHURNAL, 1970, VOL 18, NR 1, PP 5-11

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HEAT TRANSFER, MATHEMATIC ANALYSIS, APPROXIMATION METHOD, RADIATION HEAT TRANSFER, FLOW PROFILE, GAS FLOW

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0587

STEP NO--UR/0170/70/018/001/0005/0011

CIRC ACCESSION NO--AP0121256

UNCLASSIFIED

CIRC ACCESSION NO--AP0121256

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PAPER THE PROBLEM IS SOLVED
OF RADIATION HEAT TRANSFER IN THE SYSTEM OF NON GRAY ISOTHERMAL VOLUME
BOUNDED BY A) CONCAVE GRAY AND BLACK SURFACES AND B) TWO NON CONCAVE
GRAY AND TWO CONCAVE BLACK SURFACES. ANGULAR COEFFICIENTS FOR MULTIPLE
FLOW REFLECTION ARE INTRODUCED. THE EXACT FORMULAE ARE PRESENTED BY
INFINITE SERIES. APPROXIMATE FORMULAE ARE BASED ON CONVOLUTION OF
SERIES TAILS. THE NUMERICAL CALCULATIONS SHOWED GOOD ACCURACY OF SIMPLE
APPROXIMATE FORMULA (9).

UNCLASSIFIED

TITLE--INOCULATING DEFORMABLE MAGNESIUM ALLOYS -U-

AUTHOR-(04)-DETKOVA, O.V., BONDAREV, B.I., IVANOV, V.S., ANDRONOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(4), 79-80

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MAGNESIUM ALLOY, CRYSTAL STRUCTURE, ZINC ALLOY, ALUMINUM
ALLOY, MANGANESE ALLOY, SILICON ALLOY, ZIRCONIUM ALLOY, BORON ALLOY,
INOCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0333   STEP NO--UR/0136/70/043/004/0079/0080

CIRC ACCESSION NO--AP0137438
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0137438

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHARACTERISTIC FEATURES OF THE INOCULATION PROCESS OF DEFORMABLE ALLOYS OF THE MG-MN AND MG-AL-AN-MN SYSTEMS, USE OF C CONTG. ADDITIVES AS INOCULANTS, AND THE INFLUENCE OF SI, ZR, AND B ON THE GRAIN SIZE ARE DISCUSSED.

UNCLASSIFIED

Magnesium

USSR

UDC 669.721:621.774

BONDAREV, B. I., IVANOV, V. S., ANDRONOV, A. N., and PETROVA, G. V.

"Special Features in the Technology of Introducing Zirconium Into Magnesium Alloys"

Moscow, Tsvetnyye Metally, No 6, Jun 70, p 50

Abstract: One of the basic difficulties in the industrial production of magnesium alloys containing zirconium lies in the means for introducing the zirconium into the melt. Three industrial introduction processes are cited: 1) Introduction of zirconium from calcium fluorozirconate; 2) Introduction from a salt melt containing 66% K_2ZrF, 26% LiCl, and $8CaF_2$; and 3) Introduction from binary and ternary alloys. The principal disadvantages of the first two processes are outlined. It was established, during experiments and industrial fusion of VM65-1 alloy in reflecting furnaces of 12 ton capacity, that the best results on zirconium assimilation were obtained with a binary alloy containing 15-20% Zr. A brief description of the procedure is given. A comparison of results on zirconium assimilation obtained by the above described method and others show that the use of binary Mg-Zr alloy reduces the irreversible metal losses in the melt by 1.5 times.

1/1

USSR

UDC 669.046.5

KRUPMAN, L. I., SOCHNEV, A. Ye., DETOCHKA, V. I., TELESOV, S. A.,
OFENGENDEN, A. M., and NESTEROVICH, R. P.

"Steel Refining in Ladle by Self-Fluxing (Exothermic) Slag Mixtures"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS), (Collection of
Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys).
Izd-vo "Metallurgiya," No 61, 1970, pp 244-246

Translation of abstract: Results are presented of an investigation of the
burning rate of self-fluxing mixtures as a function of their thermal state
and humidity of the lime used. A procedure is described for preliminary
melting of such mixtures with liquid refining of slag in a ladle before
casting. Data are presented on experimental heats with refining by self-
fluxing mixtures for preliminary melting in a 140-ton ladle. Advantages in
using such mixtures are as follows: the degree of desulfurization obtained
with the addition of a 3% mixture is on the average 52%; the steel contamina-
tion with nonmetallic impurities is reduced; and its plastic properties are
improved. 2 tables.

1/1

4

USSR   UDC 611.8:534.612.1

ALEKSANDROV, L. N., DYSKIN, YE. A., ZLATISKAYA, N. N., KONKIN, I. F., DEV, I. D., TIKHONOVA, L. P., FILATOV, A. I., and SHADRINA, N. S., Department of Normal Anatomy, Military-Medical Academy imeni S. M. Kirov

"Condition of Some Nerve Structures After Exposure to Powerful Shock Waves"

Abstract: Cats were exposed to a powerful shock wave with an excess pressure of 0.1 to 10 kg/cm^2 lasting about 0.1 sec. The effect was not lethal and after the experiment the animals were externally indistinguishable from normal cats. They were sacrificed at various times during the 30 days following exposure to the shock wave and the nerves in the walls of the vena cava, digestive organs, dura and pia mater of the brain and spinal cord, pancreas, and thyroid were histologically examined. The medullated fibers and preterminal portions of the receptors underwent the most distinct changes. The axial cylinders were swollen and the contours uneven. Along the course of the fibers were solitary or multiple varicosities. These reactive changes were largely reversible. However, some of the nerve elements proved to be quite resistant to the shock wave, notably the nonmedullated fibers, some afferent structures (e.g., diffuse receptors), and encapsulated cell bodies.
1/1

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PHYSICS
Acoustics

USSR

KONDRATENKO, P. S., DEVCHENKOV, V. S., Institute of Theoretical Physics
imeni L. D. Landau, Academy of Sciences of the USSR, Chernogolovka

"Concerning Sound in Quantum Crystals"

Abstract: A study is made of the behavior of zero-sound and phonon modes
in quantum crystals. It is found that the parameter describing interac-
tion of these modes is the ratio of their typical velocities. The corre-
sponding dispersion equations are derived in two limiting cases (weak and
strong quantum cases) with respect to this parameter. Criteria for the
stability of quasi-partial and phonon subsystems are found on the basis
of these equations. The authors thank I. Ye. Dzyaloshinskiy for numerous
comments and interest in the work.

1/1

USSR   UDC 681.2.084.2:541.132.3

BARTAZAROV, E. G., DEVDARIANI, I. V., KABANOV, P. S., and
MARTIROSOV, V. D.

"Input Device of pH-Meter With Unipolar Field Transistor"

Moscow, Izmeritel'naya Tekhnika, No 2, Feb 73, pp 65-66

Abstract: A study was made by the Special Design Office of Ana-
lytical Instrument Making in Tbilizi of the possibility to sub-
stitute electron tubes by field transistors with p-n transition
of КР102 (TN-1) type in the input stage of pH-metrical amplifier,
built according to the principle of transformation of the input
signal frequency. Good results were obtained with the use of a
schema with feedback servosystem in the input stage of pH-meter.
The principal schema and the equivalent schema of the input de-
vice are shown and calculation formulas for determining the main
parameters of the device are given. The described input device
used in the laboratory pH-meter, redoxmeter pH-673, works satis-
factorily. The device may be used in works with different types
of transducers of d-c voltage into a-c voltage. Two figures, three
bibliographic references.

1/1

AYOLLO, Z. S., DEVDARIANI, I. V., DELYUSTO, V. V., KARABEGOV, M. A., KOMRAKOV, YU. I., MCHEDLISHVILI, K. A.

"Refractometric Detector for Liquid Chromatographs"

Translation: A model of a refractometric detector developed at the Special
Design Office for Analytical Instrument Making is described. The detector is
designed for operation with a gel filtration chromatograph. The sensitivity
threshold of the gel chromatograph is $\sim 10^{-3}-10^{-4}$ mg/ml of analized component.
The sensitivity of the recording differential refractometer when measuring the
index of refraction must be no worse than $1 \cdot 10^{-6}-1 \cdot 10^{-7}$. The check of the
sensitivity of the refractometer performed with respect to the height of the
peak on the chromatograms demonstrated the reliability of the analysis at $\sim 5 \cdot 10^{-5}$
mg/ml. The device was developed to investigate the molecular mass distribution
of polymers, but the experimental studies demonstrated the possibility of using
a differential refractometer (without a chromatograph) for any refractometric
measurements. There are 4 illustrations.
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MEDICINE
Diagnosis

ESIAVA, O. P., KVITAISHVILI, G. V., and DEVDARIANI, L. G., Institute of Sanitation and Hygiene imeni Natradze, Ministry of Health, Georgian SSR, and Tbilisi Medical Institute

"A Case of Listerial Angina in Tbilisi"

Abstract: Listeriosis is one of the diseases which have not yet been investigated among the inhabitants of Georgia. One case of listeriosis was identified in Tbilisi in 1969 in a 6-year old boy who was admitted to the City Hospital with a diagnosis of infectious mononucleosis. He was successfully treated with streptomycin -- a total of 4,800,000 units given in doses of 200,000 units (every 12 hours and supplemented with vitamins -- and recovered after about 2 weeks, when he was discharged from the hospital. Bacteriological examinations performed on mice caught in the house where he lived were negative, and thus the source of infection was not established. Reports on the study of listeriosis among farm animals in Georgia were published in 1953, 1957, and 1965. Evidence suggests that human listeriosis in Tbilisi is more frequent

1/2

USSR

ESIAVA, O. P., et al, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71, pp 144-145

than the officially recorded number indicates. Therefore, whenever gram-positive motile bacilli (some coccoid forms) are found in throat smears, further biochemical, serological, and biological tests must be performed for proper identification of the microorganisms.

2/2

USSR   UDC 612.821

DEVDARIANI, M. G., Institute of Obstetrics and Gynecology, Ministry of
Health Georgian SSR

"Electroencephalographic Study of Circadian Rhythms in Human Ontogeny"

Abstract: EEG examination of human infants just before and after birth
showed that bioelectrical activity in normal fetuses is structurally similar
to that in healthy awake newborns, whereas bioelectrical activity in patho-
logical (due to hypoxia) fetuses is identical to that in sleeping newborns.
Thus, the normal functional state of the fetus during labor is wakefulness,
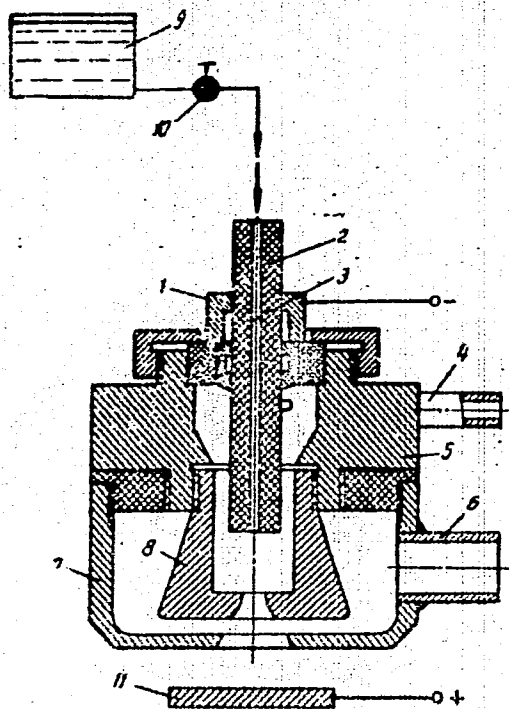an indication that its role in the process is an active one.

1/1

AA0039817 _ *DEVDARIYANI, M.G.* UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3/70

239010 JET FOR PLASMA CUTTING OF METALS where in
order to increase the quality of cutting
at the account of eliminating the double arc-form-
ation and improving the stability of the arc's
burning, the electrode 2 is made hollow, with the
diameter of aperture 3 not exceeding the inner
diameter of the forming nozzle 8. The reservoir
with the electrolyte 9 is connected with the
cavity of the electrode.   22.1.68. as 1211953/
25-27. O.Ya.MOSIASHVILI et alia Tbilisi Sect.
Electric Welding Equipment Res. Inst. (15.7.69.)
Bul.10/10.3.69. Class 49h. Int.Cl. B23k.

1/3

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19741164

AA0039817

19741165   LD

AA0039817

AUTHORS: Mosiyashvili, O. Ya.; Suladze, R. N.; Navdarashvili, I. I.;
Devdariyani, M. G.

Tbilisskiy Filial Vsesoyuznogo Nauchno-Issledovatel'skiy Instituta
Elektrosvarochnogo Oborudovaniya

3/3

19741166

TITLE--SOME VARIANTS OF NORMAL AND PATHOLOGICAL FETAL
   ELECTROENCEPHALOGRAMS -U-
AUTHOR-(03)-CHACHAVA, K.V., DEVDARIANI, M.G., LOLADZE, A.S.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 2, 1970 PP
   62-66
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EMBRYOLOGY, ELECTROENCEPHALOGRAPHY, ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0732   STEP NO--UR/0248/70/025/002/0062/0066

CIRC ACCESSION NO--AP0102700
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0102700
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 1. BY APPLYING ELECTRODES
  DIRECTLY ON THE HEAD OF THE FETUS AND IMMOBILIZING THEM IT IS POSSIBLE
  TO RECORD THE ACTION CURRENTS OF THE FETAL BRAIN DURING LABOR. THE
  RECORDING OBTAINED FURNISHES SUFFICIENT INFORMATION ABOUT THE FUNCTIONAL
  STATE OF THE FETAL CENTRAL NERVOUS SYSTEM. 2. THE FETAL EEG IS VERY
  DIFFERENT WITH PHYSIOLOGICAL LABOR FROM THE EEG DURING COMPLICATED
  LABOR, AND IT IS CHARACTERIZED BY LOW VOLTAGE AND ABSENCE OF
  PATHOLOGICAL OUTPUT. 3. IN THE CASE OF COMPLICATED DELIVERY, THE
  AMPLITUDE OF PATHOLOGICAL ACTIVITY IS HIGHER THAN NORMAL. THE
  PATHOLOGICAL ACTIVITY MAY BE CONSTANT OR PERIODIC. THE DURATION OF
  PAROXYSMS AND FREQUENCY MAY BE INDICATIVE OF THE SEVERITY OF THE FETAL
  STATE.

UNCLASSIFIED

USSR·

AYOLLO, Z. S., DEVDARIANI, M. V., KARABEGOV, M. A., KOMRAKOV, YU. I., POZHIDAYEV, G. M.

"General Industrial Automatic Refractomers of the State Instrument System"

Translation: The results of interrogating 178 scientific research planning and design organizations and production enterprises representing the parameters of 427 technological media are classified. The interrogation has as its purpose the discovery of the requirements imposed on automatic refractometers for liquid materials. It was found that the automatic refractometers must have technical characteristics insuring their operation under the conditions of variation of the index of refraction from 1.3 to 1.7, a difference range of the index of refraction from $5 \cdot 10^{-4}$ to $1 \cdot 10^{-4}$ with a measurement accuracy no worse than $1 \cdot 10^{-4}$ to $5 \cdot 10^{-4}$% at temperatures of the measured medium from +20 to +120°C with fluctuations with respect to a given point from +2 to +5° C. The analysis of the technical characteristics of the existing automatic refractometers

1/2

USSR

AYOLLO, Z. S., et al., Dokl. Vses. soveshch. Optich. i titrometrich. analizatory zhidk. sred, 1971. Ch. 2, Tbilisi, 1971, pp 9-20

permits establishment of the fact that the majority of them correspond to the requirements of specific technological processes, and only a few have the possibility of adjustment of the measurement ranges. A survey of methods of varying the measurement ranges of various types of automatic refractometers is presented, and their relative advantages and disadvantages are noted, including modular construction developed by the special design office of automatic re-fractometers for the D1RP-D and D2RP-D automatic refractometers. The correspond-ence of these automatic refractometers to the requirements of GOST 14941-69 is established. The USSR State Standards Committee gave permission to manufacture the instruments for delivery to the CEMA countries. The instruments are being manufactured by the Kiev Analytical Instrument Plant. There are 2 illustrations and 2 tables.

2/2

1/2   031   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--PLASTIC GLASS -U-

AUTHOR-(05)-KHOROSHILOVA, T.I., KUTEPOV, D.F., DEVDARIANI, T.V.,
  ZASLAVSKIY, N.N., SUZDALEVICH, G.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,437
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PHENOL FORMALDEHYDE RESIN, FURFURAL, ACETATE, GLASS, FIRE
  RESISTANT MATERIAL, GLASS PLASTIC, REINFORCED PLASTIC, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1768   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0137008
                         UNCLASSIFIED

CIRC ACCESSION NO--AA0137008
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PLASTIC GLASS WITH GREATER
  STABILITY AND LOWERED COMBUSTIBILITY IS PREPD. BY SATG. A GLASS FILLER
  WITH A BINDER AND HARDENING THE RESULTING MATERIAL WITH 5PERCENT FE
  PRIME3 POSITIVE SALTS. THIS IS CARRIED OUT WITH A COMPN. CONTG. EQUAL
  AMTS. OF A 40-70PERCENT SOLN. OF FURFURAL,PHENOL,FORMALDEHYDE ACETATE
  RESIN IN FURYL ALC. AND AN AQ. SOLN. OF AN ACETATE CONDENSATE OF A
  PHENOL,HCHO RESIN.

USSR

UDC: 537.312.62

SAVITSKIY, Ye. M., DEVINGTAL', Yu. V., GRIBULYA, V. B.

"An Attempt at Computer Prediction of the Superconductive Transition Point of Some Metallic Compounds"

Moscow, Sverkhprovodyashchiye splavy i soyedin.--sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp 7-20 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D564 [résumé])

Translation: The authors consider the results of predicting A_3B type compounds and their properties by using a computer on the basis of data on the electronic structure of the atoms of chemical elements. The work was done by using the methods of pattern recognition. An analysis is made of the interaction of vanadium, niobium and tantalum with elements of the periodic table. Examples are given of forecasting the order of magnitude of T_c for type A_3B compounds as compared with experimental data. It is shown on the basis of these data that the properties of materials can be predicted by computer methods. One illustration, seven tables, bibliography of eight titles.

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